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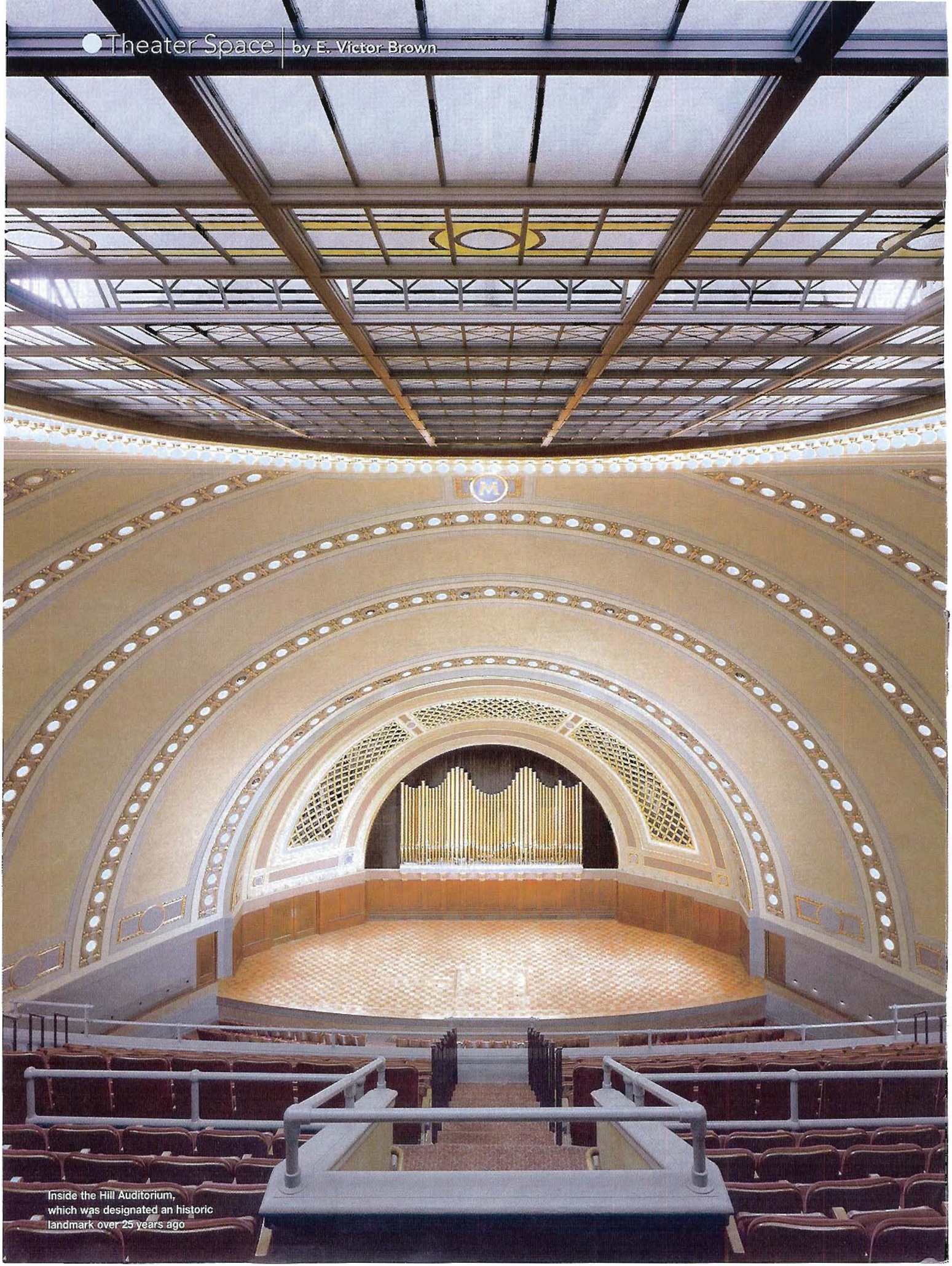
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Restoring the Hill Auditorium

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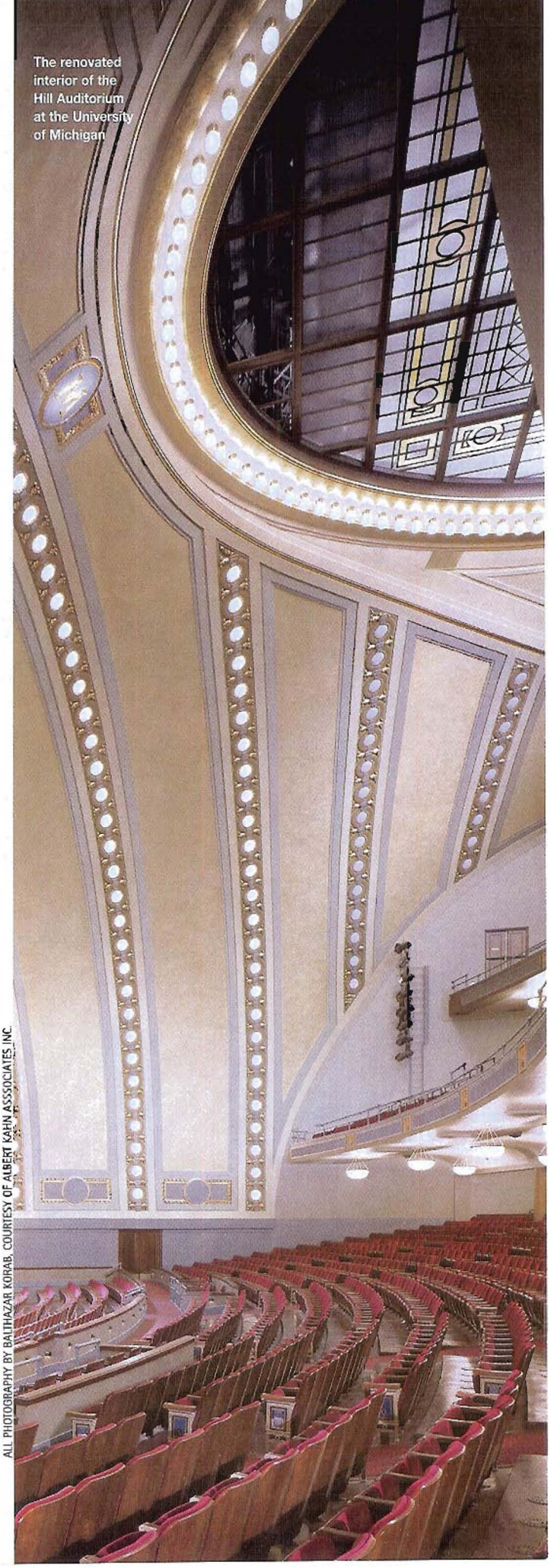
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Inside the Hill Auditorium, which was designated an historic landmark over 25 years ago

The Hills of Ann Arbor

Considered an acoustic jewel since its founding in 1913, the University of Michigan's Hill Auditorium reopens with a renovation suited for the ages.



The renovated interior of the Hill Auditorium at the University of Michigan

ALL PHOTOGRAPHY BY BALTHAZAR KORAB, COURTESY OF ALBERT KAHN ASSSOCIATES, INC.

Since its dedication in 1913, everyone from Rachmaninoff to Yo Yo Ma has praised the Hill Auditorium, located on the campus of the University of Michigan, Ann Arbor, for its acoustic intimacy. While the Albert Kahn-designed hall has seen hundreds of world-class orchestras, singers and instrumentalists, it has also served as a venue for university commencements as well as lectures by a who's who of the 20th century. The auditorium also serves as the main performance space for the university's School of Music.

By and large, the Hill, which was placed on the National Register of Historic Places in 1978, operated for almost a century as it was initially constructed. But a few years ago, the university undertook a bold plan to not only restore the hall's faded glory, but also bring its infrastructure into the 21st century.

The building required a host of renovation, restoration and new construction work, in addition to new electrical, plumbing, fire safety, HVAC, communication and acoustical treatments. Also on the list was an integrated audio support system that would sonically enhance natural acoustics for both voice and music.

To meet the enormous challenges of preserving and restoring the Hill, while simultaneously retrofitting without marring the historic structure, the university called on the original architect's firm of Albert Kahn Associates to steer the project. It was joined by historic preservation specialists Quinn Evans/Architects of



A stage perspective shows off the plush seating.

PLAYERS CLUB

Following is a list of the project team and other personnel who played key roles in the renovation of the Hill Auditorium, as well as highlights of the venue's audio inventory.

PROJECT TEAM

Albert Kahn Associates Inc.–project architect and engineers

Quinn Evans/Architects–historic preservation architects

Kirkegaard Associates–acoustic/AV consultants

Fisher Dachs & Associates–theater planning and design

Gary Steffy Lighting Design–lighting consultants

Cummins & Barnard Inc.–consultant engineers

The Christman Company—construction management

John Canning (contractor)—decorative painting

Irwin Seating Company—auditorium seating

Ann Arbor, Washington, DC and Madison, Wisconsin; acoustics consultants Kirkegaard Associates of Chicago and Boulder, Colorado; New York City-based theater consultants Fisher Dachs Associates and lighting-design specialist Gary Steffy Lighting Design of Ann Arbor.

In order to balance those unseen but necessary updates with the aesthetic and comfort issues, all design entities needed to collectively operate as a team. One of many areas where this proved essential was in removing the huge original squirrel-cage air handling units and heating plant housed beneath the lobby and auditorium. Albert Kahn Associates designed a separate lower level mechanical/electrical addition below grade on the north end of the auditorium that would house new, sophisticated air-conditioning and handling units. "In addition to relocating those new systems, we still had the challenge of very little space for major duct work throughout the existing facility," explains Albert Kahn Associates' Vitas Bagdonas.

With mechanical and HVAC moved to a new isolated structure, Hill's reconstructed basement became its new reception and bathroom areas, and the cavity under the auditorium seating became part of a pressurized plenum for HVAC return ducts. The plenum gently and quietly forces air up into the auditorium through vents in the orchestra-level floor. Its return ducts, in conjunction with the isolated mechanical and electrical rooms and other damping factors, completely isolate system noise from the auditorium.

Fire code regulations required that two new utility-routing tunnels running below grade on either side of the auditorium be separated by a physical space from the auditorium's basement. This separating tunnel also serves as a walk-through audio cable-pass area and runs from below stage support areas to just below a new orchestra-level mix position. Additional reclaimed and reconstructed under-stage space became storage, production support, cable pass, conduit runs and access points to a new 200-amp breakout service for visiting audio productions.

Kirkegaard Associates heavily influenced the design and specification of the acoustic sound locks at all levels and entrances to the auditorium proper. The consulting firm also assisted

"While the Albert Kahn-designed hall has seen hundreds of world-class orchestras, singers and instrumentalists, it has also served as a venue for university commencements as well as lectures by a who's who of the 20th century."

AUDIO EQUIPMENT

Wired microphones: Shure, AKG

Wireless microphones: Shure

Main mixer: Allan & Heath GL2200 (1)

Utility mixer: Crest XR-20 (1)

Interconnect panels: Pro Co Sound

Whirlwind microphone splitter

Production intercom: Clearcom

Symetrix SymNet 8-by-8 DSP matrix (1)

Renkus Heinz subwoofer (double, 18 inches) (1)

Renkus Heinz balcony infill (TRX61) (12)

Renkus Heinz monitor loudspeakers

Radia Pro Speakers Neo8 (112)

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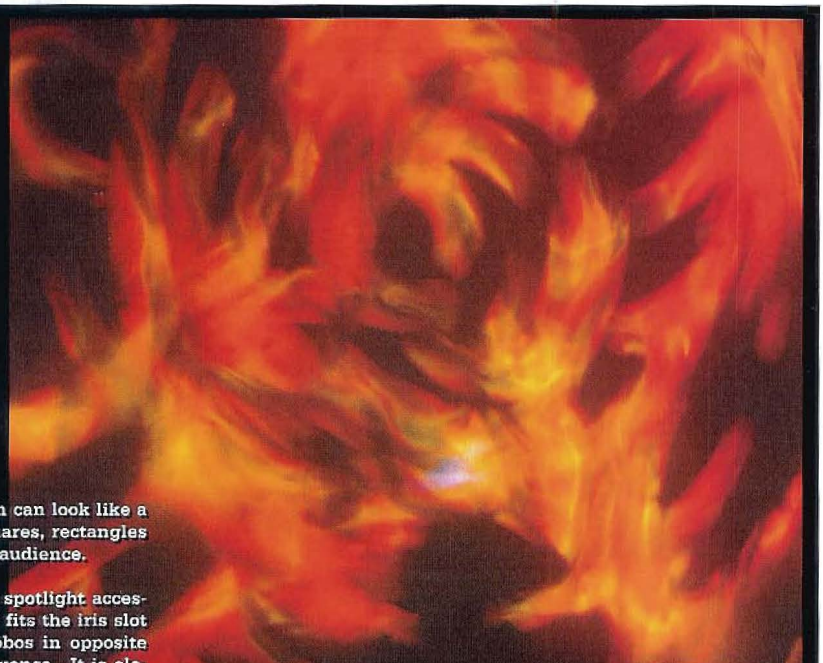
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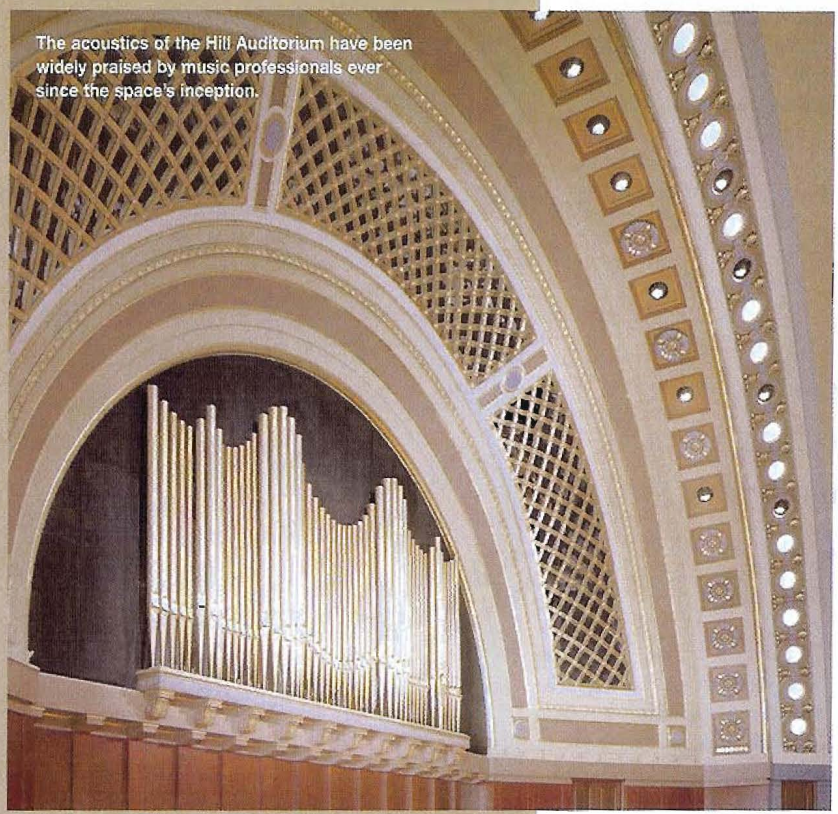
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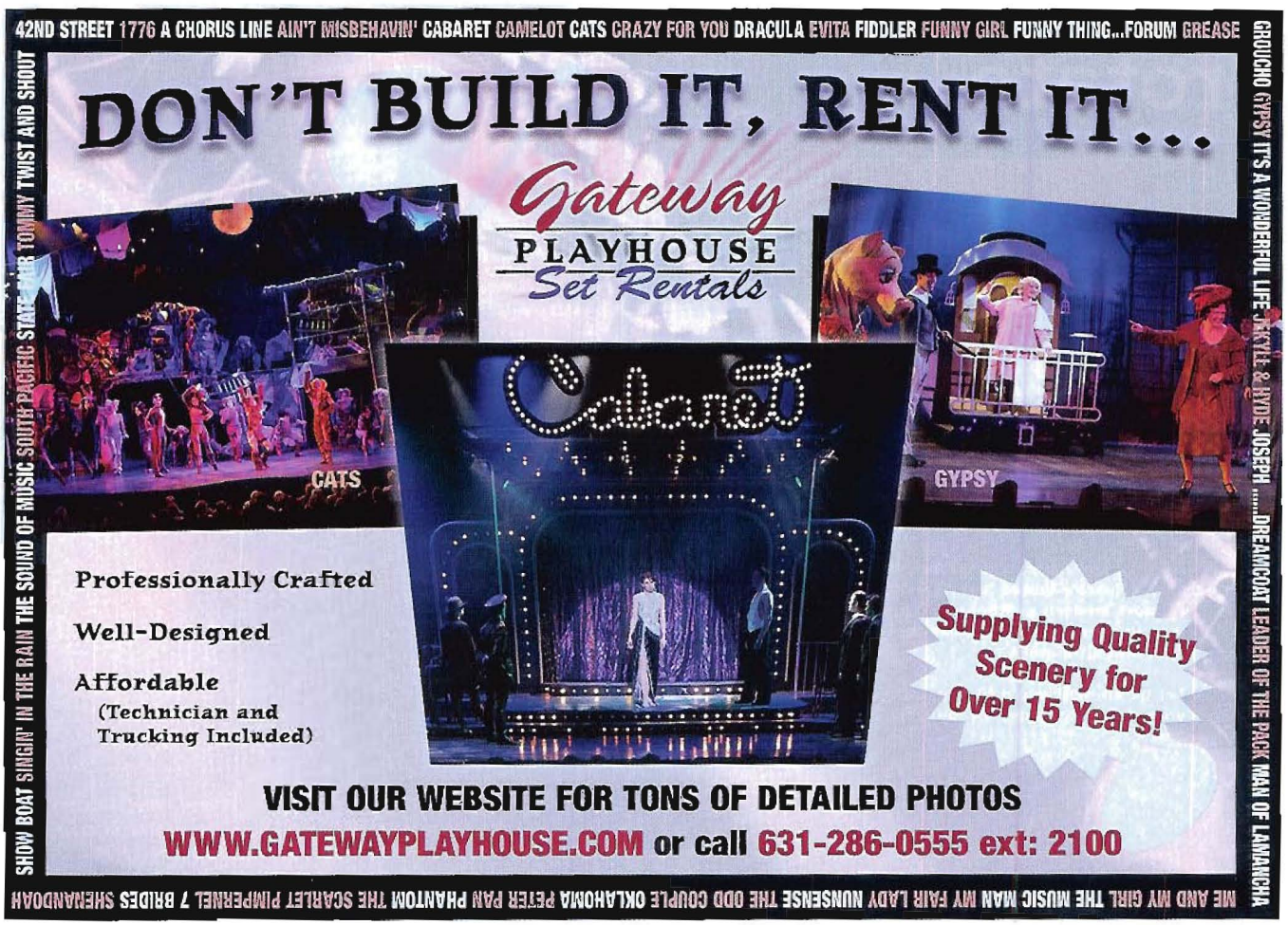


The acoustics of the Hill Auditorium have been widely praised by music professionals ever since the space's inception.

Fisher Dachs and Quinn Evans/Architects in the selection of new seating materials for sound absorption/reflection qualities and in the selection of new architectural lighting designed to eliminate dimming noise. Kirkegaard also specified a new wooden stage surround to replace the plaster surround that originally defined the stage space from the auditorium.

Due to the shape and acoustic properties of the room, the firm determined that only highly directional sound could blend with the natural acoustics and overcome the reverberation. Kirkegaard AV designer Frans Swarte and the rest of the Kirkegaard project members ultimately settled on the EAW DSA Digitally Steerable Line Array to accomplish the reinforcement goals. The column-like DSA line arrays, along with a subwoofer, are hidden behind the pipe organ screen so as not to detract from the architectural aesthetic.

Another major construction change was the replacement of the original mezzanine level booth with a new one added at balcony level. The new place-



ment allowed creation of a ladder access from the new booth to the new catwalk system above the hall. This provides audio, video and lighting technicians needed access to fixtures, inputs or rigging, as well as front-to-back access via catwalk. In addition to better access and followspot angles, booth relocation returned 45 prime seats in the center of the mezzanine level in exchange for roughly the same number at the top of the balcony (Since it was constructed, the Hill's 4,578-seating capacity has been reduced to just over 3,700). "From the owner's perspective, it was a real positive because some of the best seats in the house were being taken up by a poorly located and small projection booth," says Quinn Evans' Ken Clein.

In addition to involvement in all performance areas such as performance lighting, rigging, stage and support areas, Fisher Dachs was closely involved with the comfort and accessibility issues for the auditorium itself. "We're very accustomed to helping reconfigure, in this case an orchestra level, so that disabled people have numerous opportunities for different viewing experiences, which is about more than just ticket prices," says Fisher Dachs Associate Barbara Spandorf. "The same choices must be made available to all patrons, regardless of mobility or other ADA issues. Hill being an existing facility makes that more challenging to accomplish."

Other new attributes to the Hill's restoration and renovation include recaptured lower-level space transformed into an elegant reception area with refreshment services.

With the challenges of an 18-month window for project completion a distant memory, praise has only increased since the Hill's grand reopening gala in January 2004. Widely considered to be an acoustical gem for over 90 years, the $39 million project will insure another 90 years of praise from generations of patrons and students for many performances to come.

"Widely considered to be an acoustical gem for over 90 years, the $39 million project will insure another 90 years of praise from generations of patrons and students for many performances to come."

E. Victor Brown is a Chicago-based freelance writer specializing in pro audio, video and architecture.

project





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